

Amendments to the Drawings:

Please substitute the attached sheets (Figures 2-4) of formal drawings for the formal drawings originally filed with the application. A separate Transmittal of Formal Drawings is submitted.

The drawing sheets attached in connection with the above-identified application containing Figures 2-4 are being presented as a new formal drawing sheets to be substituted for the previously submitted drawing sheets. The drawing Figures 2-4 have been amended.

The specific changes, which have been made to Figures 2-4, are that the duplicate reference numeral 11 has been replaced with the reference numeral 15.

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, paragraphs have been amended on pages 2, 5, 7, 9, 10, 11, 12, 17, 19, 20, 22, 23 and 28.

Claims 15-23 are requested to be cancelled. Claims 1-14 are currently being amended. New claims 24 and 25 are being added.

This amendment adds, changes and deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Specification

In the Office Action, the Examiner stated that the title of the invention was not descriptive and that a new title, clearly indicative of the invention was required. In response, Applicants amend the title to read: "MULTIPLE RECOGNITION IMAGE PROCESSING APPARATUS." The Applicants assert that the new title is now indicative of the invention to which the claims are directed. Thus, reconsideration of the title is respectfully requested.

The disclosure was objected to for various informalities. In response, Applicants amend the specification. Specifically, paragraphs have been amended on pages 2, 5, 7, 9, 10, 11, 12, 17, 19, 20, 22, 23 and 28. Thus, reconsideration of the specification is respectfully requested.

Amendments to the Drawings

Figures 2-4 were amended to replace the duplicate reference numeral 11 with the reference numeral 15. Applicants respectfully submit that no new matter was added.

Objections to the Drawings

In the Office Action, the drawings were objected to under 37 CFR § 1.83(a). In response, claims 1-14 were amended to be consistent with certain terms used in the drawings. However, Applicants respectfully submit that some claim features specified by the Examiner are features disclosed in the description and are illustrated by labeled representation. Specifically, the first memory section and second memory section are represented by labels “image section” and “recognition section,” respectively, in the memory box 5. Similarly, the first and second compression sections are shown as the boxes labeled compression/depression section 6 and improved picture quality for compression/depression 4 respectively. Further, Fig. 5 is a block diagram showing an external interface 23 connected to a plurality of image forming apparatuses represented by the box labeled “nth image processing 22.”

Applicants respectfully submit that the drawings show features of the present invention in compliance with 37 CFR § 1.83(a) and respectfully request that the objection be withdrawn.

Claim Objections

In the Office Action, the Examiner objected to claim 15 because of an informality. Without agreeing or acquiescing to the objection, Applicants cancel claim 15. Therefore, Applicants respectfully request that the objection be withdrawn.

Claim Rejections under 35 U.S.C. § 112

In the Office Action, claims 1-4, 6-11, 15 and 17 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claims 1-4, 6-11, 15 and 17 were rejected for lacking sufficient antecedent basis for a claim limitation.

In response, Applicants amend claims 1-4 and 6-11 and cancel claims 15 and 17. Accordingly, Applicants respectfully submit that claims 1-4 and 6-11 now meet the requirements set forth under 35 U.S.C. § 112, second paragraph and request that the rejection be withdrawn.

Claim Rejections under 35 U.S.C. § 102

In the Office Action, claims 1, 3-5, 7-9, 12-13, 15-17 and 19-22 were rejected under 35 U.S.C. § 102(b) as being anticipated by Matsumoto (U.S. Patent No. 5,420,694).

In response, without agreeing or acquiescing to the rejection, Applicants cancel claims 15-17 and 19-22 and amend claims 1, 3-5, 7-9, and 12-13 to further define the invention. Applicants respectfully submit that the above amended claims are allowable for at least the following reasons.

Applicants respectfully traverse the rejection of claims 1, 3-5, 7-9, and 12-13 as amended. Applicants rely on M.P.E.P. § 2131, entitled “Anticipation – Application of 35 U.S.C. § 102(a), (b) and (e)” which states, “a claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Applicants respectfully submit that Matsumoto does not teach each and every element of amended claims 1, 3-5, 7-9, and 12-13.

The claims contain recitation of features that are not present in the device of Matsumoto. Specifically, independent claim 1, as amended, recites an image processing apparatus comprising a first memory section, a micro region recognition section which creates a micro recognition signal simultaneously with the storage of image information in the first memory section, a second memory section which stores the micro recognition signal, a macro recognition section that carries out layout analysis based on the micro recognition signal, a recognition signal modifying section that modifies the micro recognition signal based on the macro recognition section layout analysis and an improved picture quality modifying section.

The micro recognition section is capable of detecting the edges of a given image. The macro recognition section observes the layout of a whole image based on a micro recognition signal. In addition, the macro recognition section recognizes a character section, a photograph section, and a screened halftone section of the image information and removes the screened halftone noise and emphasizes the characters at the screened halftone image section. Thus, the claimed invention performs both micro recognition and macro recognition on image

information. Further, the claimed invention stores image information and executes micro recognition on the image information simultaneously.

In contrast, Matsumoto does not teach or suggest an image forming apparatus reciting a micro recognition section that creates a micro recognition signal and a macro recognition section that carries out layout analysis based on the micro recognition signal. Further, Matsumoto does not teach or disclose a recognition signal modifying section that modifies the micro recognition signal based on the macro recognition section layout analysis. Instead, Matsumoto merely discloses an image reading section that is capable of discriminately recognizing colors and an image processing section that recognizes an image type (e.g., monochromatic character, monochromatic halftone or color). (See Col. 3, lines 31-39.)

Claims 3-5, 7-9 and 12-13 depend from independent claim 1 and are patentable for at least the same reasons. Further, Matsumoto fails to teach or disclose a micro recognition section which finds a page-by-page feature amount of the image information and recognizes whether the image information is a white and black image or not in compliance with the feature amount and a color modifying section which transforms the image information into a black and white image, and modifies and outputs an image in compliance with the micro recognition signal modified by the modifying section as claimed in amended claims 12 and 13. Accordingly, Applicants respectfully submit that claims 1, 3-5, 7-9 and 12-13 are not anticipated by Matsumoto and are therefore allowable. Thus, Applicants respectfully request that the rejections under 35 U.S.C. § 102(b) be withdrawn and claims 1, 3-5, 7-9 and 12-13 be allowed.

Claim Rejections under U.S.C. § 103

In the Office Action, claims 2, 6 and 10-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto in view of Nakayama (U.S. Patent Publication No. 2002/0090137 A1). In addition, claims 14, 18 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto in view of Nagasawa et al. (U.S. Patent Publication No. 2001/0013944).

In response, without agreeing or acquiescing to the rejection, Applicants amend claims 2, 6, 10-11 and 14 and cancel claims 18 and 23. Claims 2, 6, 10-11 and 14 are dependent upon independent claim 1 as amended. As stated above, Matsumoto does not disclose or suggest all of the features of amended independent claim 1. Further, Nakayama and Nagasawa et al. fail to cure the deficiencies of Matsumoto. For example, neither Nakayama nor Nagasawa et al. teach or disclose an image forming apparatus reciting a micro recognition section that creates a micro recognition signal and a macro recognition section that carries out layout analysis based on the micro recognition signal as claimed in amended claim 1. Thus, Applicants submit that claims 2, 6, 10-11 and 14 are allowable and respectfully requests that the rejection be withdrawn.

New Claims

Claims 24 and 25 are added as new claims to further define the invention. Support for new claims 24 and 25 can at least be found on pages 13 and 14 of the specification.

Conclusion

After amending the claims as set forth above, claims 1-14 and 24-25 are now pending in this application. Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

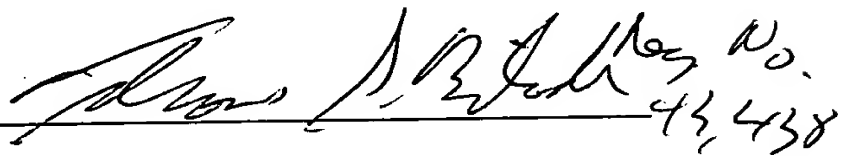

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741.

Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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